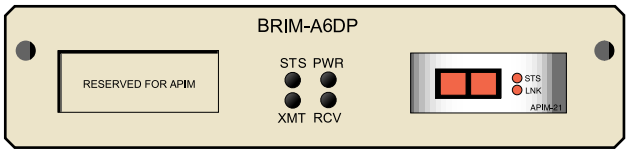
BRIM-A6DP
USER'S GUIDE



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Manufacturer's Address:	**35 Industrial Way** **PO Box 5005** **Rochester, NH 03867**
European Representative Name:	**Mr. J. Solari**
European Representative Address:	**Cabletron Systems Limited** **Nexus House, Newbury Business Park** **London Road, Newbury** **Berkshire RG13 2PZ, England**
Conformance to Directive(s)/Product Standards:	**EC Directive 89/336/EEC** **EC Directive 73/23/EEC** **EN 55022** **EN 50082-1** **EN 60950**
Equipment Type/Environment:	**Networking Equipment, for use in a Commercial or Light Industrial Environment.**

We the undersigned, hereby declare, under our sole responsibility, that the equipment packaged with this notice conforms to the above directives.

Manufacturer	Legal Representative in Europe
Mr. Ronald Fotino	Mr. J. Solari
Full Name	Full Name
Principal Compliance Engineer	Managing Director - E.M.E.A.
Title	Title
Rochester, NH, USA	Newbury, Berkshire, England
Location	Location

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CHAPTER 1
INTRODUCTION

Welcome to the Cabletron Systems **BRIM-A6DP User's Guide**. This manual provides the following information:

- Describes BRIM-A6DP features.
- Explains how to install the BRIM-A6DP in a Cabletron Systems Media Interface Module (MIM) or standalone hub.
- Provides instructions on using BRIM-A6DP Local Management to perform functions such as viewing current ATM connections, configuring Permanent Virtual Channels (PVCs), configuring LAN Emulation Clients (LECs), viewing Emulated LAN properties, configuring operating parameters for Switched Virtual Channels (SVCs), and assigning front panel Ethernet ports and/or Emulated LANs (ELANs) to Virtual LANs (VLANs).
- Outlines specifications for the Cabletron Systems Asynchronous Transfer Mode (ATM) Bridge/Router Interface Module (BRIM).

The BRIM-A6DP provides additional connectivity/functionality to various Cabletron MIMs and standalone hubs. You should have a general working knowledge of ATM networks and the ATM User-Network Interface Specification (UNI), as specified by the ATM Forum, prior to installing the BRIM-A6DP.

1.1 USING THIS MANUAL

Read through this manual completely to familiarize yourself with its content and to gain an understanding of the features and capabilities of the BRIM-A6DP. The following list provides an overview of each section of this manual:

Chapter 1, **Introduction**, outlines the contents of this manual, describes BRIM-A6DP features and concludes with a list of related manuals.

Chapter 2, **Installation**, describes how to install ATM Port Interface Modules (APIMs) into the BRIM-A6DP. This chapter also explains how to install a BRIM-A6DP into a MIM or a standalone hub.

Chapter 3, **Local Management**, describes how to use the BRIM-A6DP Local Management screens to perform a variety of configuration and management procedures.

Chapter 4, **LANVIEW LEDs**, describes how to use the BRIM-A6DP LEDs to monitor BRIM performance and status.

Appendix A, **APIM Specifications**, describes specifications and features for each of the APIMs available for the BRIM-A6DP.

Appendix B, **BRIM-A6DP Specifications**, describes specifications and safety compliance for the BRIM-A6DP.

1.2 DOCUMENT CONVENTIONS

The following conventions are used throughout this document:

Note symbol. Calls the reader's attention to any item of information that may be of special importance.

Tip symbol. Conveys helpful hints concerning procedures or actions.

Caution symbol. Contains information essential to avoid damage to the equipment.

Electrical Hazard Warning symbol. Warns against an action that could result in personal injury or death due to an electrical hazard.

1.3 BRIM-A6DP OVERVIEW

The BRIM-A6DP extends the functionality of your Cabletron Systems MIM or standalone hub to include remote bridging/routing capability. It allows remote connectivity using ATM technology.

Using two APIMs on the front panel of the BRIM-A6DP, Cabletron Systems can offer redundant ATM links from the BRIM to a switched ATM network. Cabletron Systems provides a variety of APIMs that let you select the configuration of your choice. If port redundancy is not a requirement, then only one APIM may be installed.

The BRIM-A6DP supports two types of Virtual Channels: Permanent Virtual Channels (PVCs), and Switched Virtual Channels (SVCs). It also supports the ATM Forum's User-Network-Interface (UNI) for SVC signaling, and FORE Systems' Simple Protocol for ATM Network Signaling (SPANS).The BRIM-A6DP allows the user to create LAN Emulation Clients (LECs), and Virtual LANs (VLANs). Refer to Chapter 3, **Local Management**, for information on BRIM-A6DP Local Management features.

1.4 BRIM-A6DP FEATURES

ATM Port Interface Modules (APIMs)

The BRIM-A6DP supports two Cabletron Systems APIMs for ATM connectivity and redundancy. You can easily install APIMs into the BRIM for the interface of your choice.

APIMs support multiple types of physical layer cable types and are fully compliant with all ATM Forum specifications.

MIB Support

For additional information on how to extract and compile individual MIBs, refer to the Release Notes, or contact Cabletron Systems Technical Support (refer to Section 1.7, **Getting Help**).

LANVIEW Diagnostic LEDs

Cabletron Systems provides a visual diagnostic and monitoring system called LANVIEW. The BRIM-A6DP LANVIEW LEDs help you quickly identify bridge and link status.

1.5 RELATED MANUALS

Use the following manuals to supplement the procedures and other technical data provided in this manual. This manual references procedures in these manuals, where appropriate, but does not repeat them.

Cabletron Systems *EMM-E6 User's Guide*

Cabletron Systems *ESXMIM Installation Guide*

Cabletron Systems *ESX-1320/ESX-1380 User's Guide*

Cabletron Systems *MicroMMAC User's Guide*

Cabletron Systems *NBR-620/420/220 Installation Guide* and *NBR-620/420/220 Local Management Guide*

1.6 GETTING HELP

If you need additional support related to this device, or if you have any questions, comments, or suggestions concerning this manual, contact Cabletron Systems Technical Support:

Phone	(603) 332-9400 Monday – Friday; 8 A.M. – 8 P.M. Eastern Time
CompuServe	GO CTRON from any ! prompt
Internet mail	support@ctron.com
FTP Login Password	ctron.com (134.141.197.25) *anonymous* *your email address*
BBS Modem setting	(603) 335-3358 8N1: 8 data bits, 1 stop bit, No parity
For additional information about Cabletron Systems products, visit our World Wide Web site: http://www.cabletron.com/	

Before calling Cabletron Systems Technical Support, have the following information ready:

- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The serial and revision numbers of all Cabletron Systems products in the network
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers

CHAPTER 2
INSTALLATION

This chapter contains instructions for unpacking the BRIM, installing APIMs, and installing the BRIM into Cabletron Systems devices that support BRIM technology.

To install the BRIM and APIMs, you need the following tools:

- Disposable grounding wrist strap (provided with any MIM or hub)
- Phillips screwdriver

The BRIM-A6DP and the host MIM or hub are sensitive to static discharges. Use a grounding strap and observe all static precautions during this procedure. Failure to do so could result in damage to the BRIM-A6DP or the host MIM or hub.

2.1 UNPACKING THE BRIM

Unpack the BRIM as follows:

1. Remove the shipping box material covering the BRIM.
2. Carefully remove the module from the shipping box. Leave the module in its non-conductive bag until you are ready to install.
3. Attach the disposable grounding strap to your wrist (refer to the instructions on the disposable grounding strap package).
4. After removing the module from its non-conductive bag, visually inspect the device. If you notice any signs of damage, contact Cabletron Systems Technical Support immediately.

2.2 Installing APIMs

Only qualified personnel should install or service this unit.

To install an APIM into the BRIM-A6DP refer to Figure 2-1 and perform the following steps:

1. Attach the disposable grounding strap to your wrist (refer to the instructions on the disposable grounding strap package).
2. Remove the two faceplate screws from the BRIM.
3. Remove the three screws from the BRIM standoffs.
4. Insert the APIM connector pins into the BRIM connector.

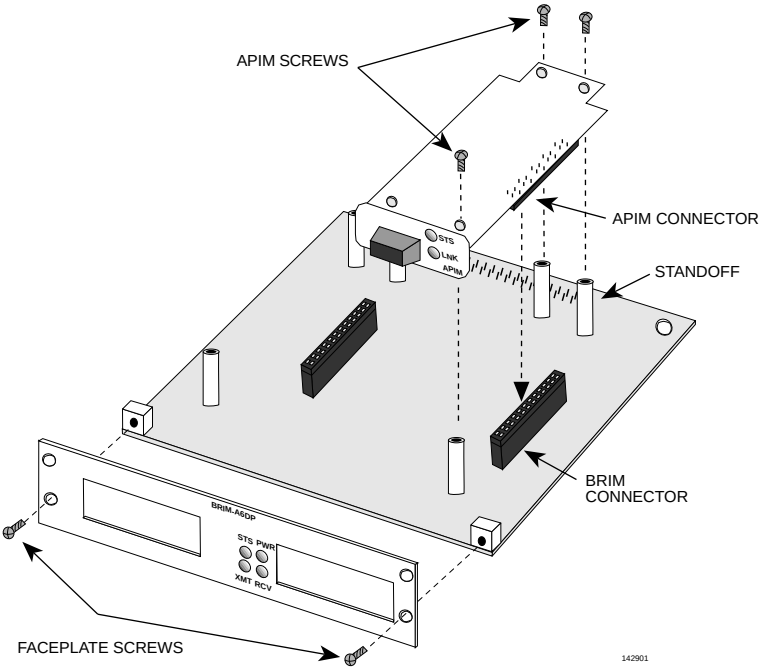


Figure 2-1 Installing an APIM

5. Press down firmly on the APIM until the pins slide all the way into the connector holes. Ensure the APIM sits flush on the standoffs.
6. Secure the APIM with the screws provided with the APIM.
7. Reattach the faceplate to the BRIM.

2.3 INSTALLING BRIMs

Only qualified personnel should install or service this unit.

You can install a BRIM in any Cabletron Systems device that supports BRIM technology (e.g., EMM-E6, MicroMMAC). Refer to the release notes for the version of firmware running on the Cabletron Systems device to ensure that the BRIM-A6DP is supported. The following subsections provide generic instructions for installing a BRIM-A6DP in a MIM or in a standalone hub. Refer to your specific MIM or standalone hub documentation for exact BRIM slot and connector locations.

2.3.1 Installing a BRIM in a MIM

To install a BRIM-A6DP in a MIM that supports BRIM technology perform the following steps:

1. Power-down the MMAC hub and remove all power cords.

Cabletron Systems recommends that you power-down the hub even though Cabletron Systems MIMs have “hot swap” capabilities.

2. Disconnect all cables from the MIM. Note the ports to which these cables attach.
3. Attach the disposable grounding strap to your wrist (refer to the instructions outlined on the disposable grounding strap package).
4. Unscrew the top and bottom knurled knobs of the MIM faceplate.

5. Slide out the MIM, and place it on its side with the internal components facing up.
6. Remove the faceplate mounting screws and the BRIM coverplate. See Figure 2-2.
7. Remove the standoff screws. See Figure 2-2.

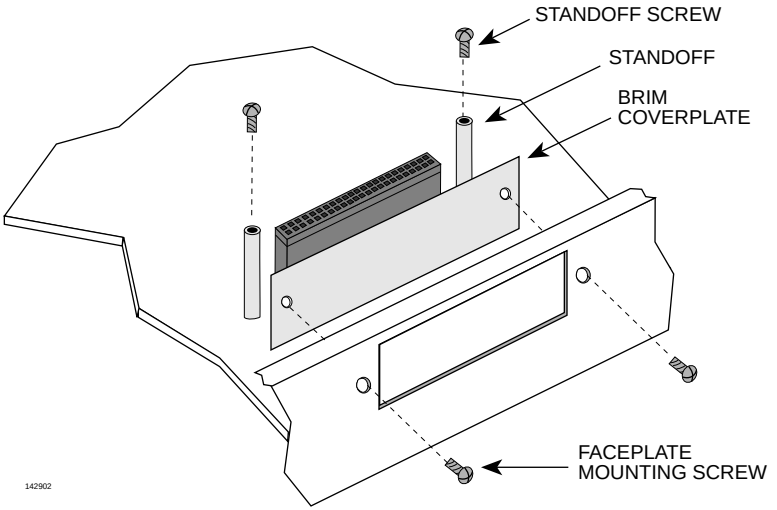


Figure 2-2 Removing the BRIM Coverplate

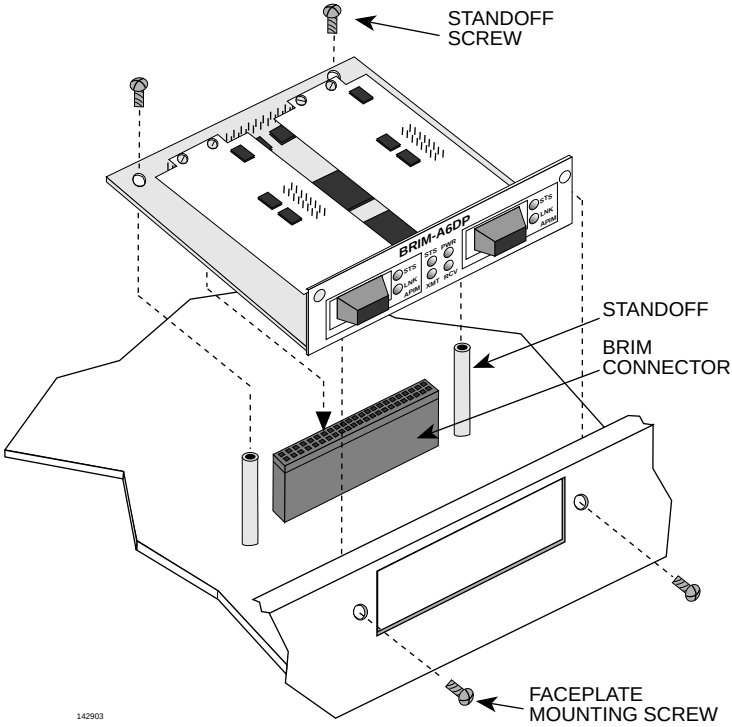


Figure 2-3 Installing the BRIM-A6DP

8. Place the BRIM behind the MIM faceplate. See Figure 2-3.
9. Insert the connector pins of the BRIM-A6DP into the BRIM connector on the MIM.
10. Press down firmly on the back of the BRIM until the pins slide all the way into the connector holes.

Ensure that the standoffs on the MIM align with the standoff screw holes on the BRIM.

11. Reinstall the faceplate mounting screws and the standoff screws.
12. Reinstall the MIM in the MMAC.
13. Reattach all MMAC power cords.
14. Reattach the network cabling to the MIM.
15. Refer to Chapter 3 for instructions on configuring the BRIM-A6DP using Local Management.

2.3.2 Installing a BRIM in a Hub

To install a BRIM-A6DP into a standalone hub that supports BRIM technology perform the following steps:

1. Power down the hub and remove the power cord.
2. Disconnect all cables from the hub. Note the ports to which these cables attach.

Ensure that you remove the power cord and ONLY the screws required to remove the chassis cover. Failure to comply could result in an electric shock hazard.

3. Attach the disposable grounding strap to your wrist (refer to the instructions outlined on the disposable grounding strap package).
4. Remove the hub chassis cover (refer to your specific hub documentation for instructions on removing the hub chassis cover).
5. Remove the faceplate mounting screws and the BRIM coverplate. See Figure 2-2.
6. Remove the standoff screws. See Figure 2-2.
7. Place the BRIM behind the hub faceplate. See Figure 2-3.
8. Insert the connector pins of the BRIM into the BRIM connector on the hub.
9. Press down firmly on the back of the BRIM until the pins slide all the way into the connector holes.

Ensure that the standoffs on the hub align with the standoff screw holes on the BRIM.

10. Reinstall the faceplate mounting screws, and install the standoff screws.

Ensure that the chassis cover is in place before reconnecting the power cord.

11. Reattach the chassis cover to the hub, reconnect the power cord, and reconnect the hub to your network.
12. Refer to Chapter 3 for instructions on configuring the BRIM-A6DP using Local Management.

CHAPTER 3
LOCAL MANAGEMENT

This chapter explains how to view current ATM connections, configure Permanent Virtual Channels (PVCs), configure LAN Emulation Clients (LECs), view Emulated LAN properties, configure operating parameters for Switched Virtual Channels (SVCs), and to assign front panel Ethernet ports and/or Emulated LANs (ELANs) to Virtual LANS (VLANs) using Local Management.

Ensure the following procedures have been completed before configuring the BRIM-A6DP through Local Management:

- An APIM must be installed in the BRIM-A6DP.
- The BRIM-A6DP must be installed in the host MIM or standalone hub.
- The device must be up and running.
- A Local Management terminal must be configured and properly connected to the host MIM or standalone hub in which the BRIM-A6DP resides.

Refer to the host device User's Guide for instructions on establishing a Local Management connection.

3.1 LOCAL MANAGEMENT KEYBOARD CONVENTIONS

All key names appear in this manual as capital letters. For example, the Enter key appears as ENTER and the Backspace key appears as BACKSPACE. Table 3-1 explains the keyboard conventions used in this manual as well as the key functions.

Table 3-1 Keyboard Conventions

Key	Function
ENTER Key and RETURN Key	These are selection keys that perform the same Local Management function. For example, “Press ENTER” means that you can press either ENTER or RETURN, unless this manual specifically instructs you otherwise.
SPACE Bar and BACKSPACE Key	These keys cycle through selections in some Local Management fields. Use the SPACE bar to cycle forward through selections and use BACKSPACE to cycle backward through selections.
Arrow Keys	These are navigation keys. Use the UP-ARROW, DOWN-ARROW, LEFT-ARROW, and RIGHT-ARROW keys to move the screen cursor. For example, “Use the arrow keys” means to press whichever arrow key moves the cursor to the desired field on the Local Management screen.

3.2 ACCESSING BRIM-A6DP LOCAL MANAGEMENT

The screens shown in this chapter are for a BRIM-A6DP installed in an ESX-1320. Some screens may display different information, in terms of number of ports, depending on the host device in which the BRIM-A6DP resides. The functionality of all Local Management screens, however, is the same regardless of the host device in which the BRIM-A6DP resides.

To access BRIM-A6DP Local Management, perform the following steps:

1. Use the arrow keys to select **BRIM-A6DP** from the Setup Menu screen.
2. Press ENTER. The ATM Setup screen, Figure 3-1, displays.

ESX-1320 Local Management Flash Image Version: XX.XX.XX

ATM SCREENS

CONNECTION TABLE

LEC ADMINISTRATION

ELAN PROPERTIES

SIGNALLING

VLAN ASSIGNMENT

RETURN

Figure 3-1 The BRIM-A6DP Setup Screen

3.3 THE ATM SETUP SCREEN

The ATM Setup screen displays five options for configuration and monitoring of the BRIM-A6DP. The following list explains each of the ATM Setup screen fields and commands:

Connection Table
This option allows the user to view the current configured virtual connections (PVCs and SVCs) of the BRIM-A6DP. The Connection Table screen also provides access to the Add/Delete Entry screen, which is used to add, modify, or delete PVCs and SVCs.

LEC Administration
This option displays the LEC Administration screen. This screen is used to delete or modify existing LAN Emulation Clients (LECs), and to create new LECs. New LECs can be autoconfigured, or created manually.

ELAN Properties
This option displays the ELAN Properties screen. This is a read-only screen that allows the user to view information on multiple LAN Emulation components.

Signalling
This option opens the Signalling screen. This screen allows the user to view the current version of User-Network Interface (UNI) being used by the BRIM-A6DP, and to view the current state of the Interim Local Management Interface (ILMI).

VLAN Assignment
This option displays the VLAN Assignment screen. This screen allows the user to create Virtual LANs (VLANs) and then assign front panel Ethernet ports and/or ELANs to the created VLANs. This allows for the creation of multiple separate workgroups on a single device. The VLAN Assignment screen also provides access to the Add Router MAC screen which is used to statically program the MAC address of a Layer 3 router which is used to provide inter-ELAN communication. The Add Router MAC screen is also used to enter the MAC addresses of end devices that belong to more than one VLAN/ELAN pair.

RETURN
This command opens the previous Local Management screen.

3.4 THE CONNECTION TABLE SCREEN

To access the Connection Table screen from the ATM Setup screen, perform the following steps:

1. Use the arrow keys to highlight the **Connection Table** selection of the ATM Setup screen.
2. Press ENTER; the Connection Table screen, Figure 3-2, displays.

ESX-1320 Local Management Flash Image Version: XX.XX.XX

BRIM-A6DP SETUP

ATM Port 1 Total Connections: 7

VPI	VCI	Encapsulation Type	AAL Type	Oper. Status
0	0005	N/A	5	Enabled
0	0016	N/A	5	Enabled
0	0040	N/A	5	Enabled
0	0041	VC Mux 802.3 LANE	5	Enabled
0	0044	VC Mux 802.3 LANE	5	Enabled

[PORT 1] [6-7] ADD/DELETE ENTRY RETURN

Figure 3-2 The Connection Table Screen

3.4.1 Connection Table Screen Fields

The Connection Table screen allows the user to view the current configured virtual connections, (PVCs and SVCs) on the BRIM-A6DP.

The following list explains each of the Connection Table screen fields:

ATM Port Current Total Connections
This field displays the number of current connections on the BRIM-A6DP.

VPI
This field displays the Virtual Path Identifier (VPI) of the connection. This field reads 0.

VCI
This field displays the Virtual Channel Identifier (VCI) of the connection. This field reads between 1 and 1023.

Encapsulation Type
This field displays the type of Encapsulation being used to switch Ethernet frames to ATM cells. The four possible options for this field are as follows:

- **VC MUX 802.3 LANE -** VC Based Multiplexed 802.3 LAN Emulation. This method is specified by the ATM Forum LAN Emulation specification. This option is available for SVCs only.
- **VC MUX 802.3 -** VC Based Multiplexing for Bridged Protocols as defined by the IETF RFC 1483.
- **LLC Encapsulated -** Logical Link Control for Bridged Protocols as defined by the IETF RFC 1483.
- **N/A -** This encapsulation type signifies channels that are reserved for UNI signalling or LAN Emulation control information.

AAL Type
This field displays the ATM Adaptation Layer being used by the BRIM-A6DP. This field displays "**3/4**" or "**5**".

Oper. Status
This field displays the operational status of the Virtual Channel Connection (VCC). This field displays "**Enabled**" or "**Disabled**".

[Port 1]
This field allows the user to toggle between each APIM installed in the BRIM-A6DP, displaying the current connections on each APIM respectively.

[6-10]
This field opens the next screen if the BRIM-A6DP has more than five current connections. To toggle through the available connections use the SPACE bar to select the group of five connections you wish to view.

Add/Delete Entry
This command opens the Add/Delete Entry screen. The Add/Delete Entry screen is used to create, modify, or delete PVCs.

RETURN
This command opens the previous Local Management screen.

3.5 THE ADD/DELETE ENTRY SCREEN

To access the Add/Delete Entry screen from the Connection Table screen, perform the following steps:

1. Use the arrow keys to highlight the **ADD/DELETE ENTRY** selection at the bottom of the Connection Table screen.
2. Press ENTER, the Add/Delete Entry screen, Figure 3-3, displays.

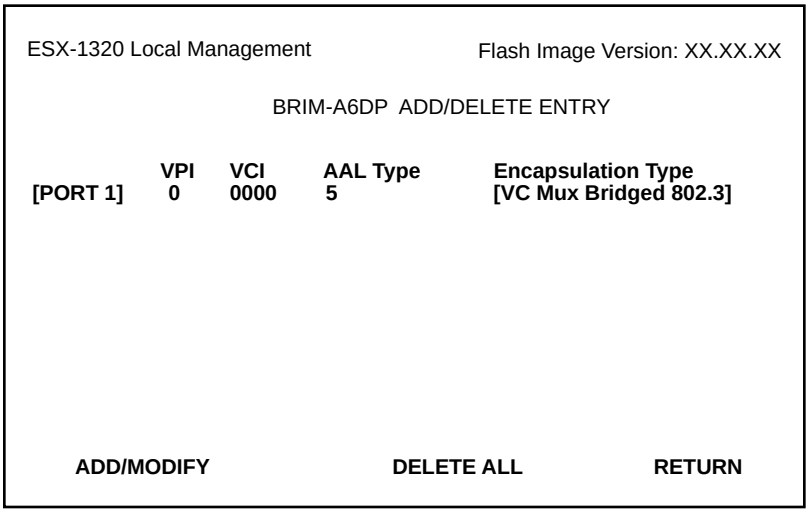
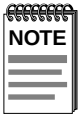


Figure 3-3 The Add/Delete Entry Screen

3.5.1 Add/Delete Entry Screen Fields

[Port 1]
This field represents the port the PVC will be created on when using a BRIM-A6DP with two APIMs installed.



On this version of firmware, all PVCs are automatically created on both APIMs.

VPI
This field is used to enter the Virtual Path Identifier of the PVC. The available range of this field is 0.

VCI
This field is used to enter the Virtual Channel Identifier of the PVC. The available range for this field is 1 through 1023.

AAL Type
This field is used to enter which ATM Adaptation Layer will be used by the PVC. The BRIM-A6DP supports AAL 3/4 or AAL 5. The default setting for the BRIM-A6DP is AAL 5.

Encapsulation Type
This field displays the type of data encapsulation that the BRIM-A6DP will use to perform LAN to ATM translation. This field toggles between the following options:

- **VC MUX Bridged 802.3 -** VC Based Multiplexing as defined by the IETF RFC 1483.
- **LLC Encapsulated -** Logical Link Control for Bridged Protocols as defined by the IETF RFC 1483.

ADD/MODIFY
This command adds the PVC, or modifies an existing PVC, to the BRIM-A6DP connection table.

DELETE ALL
This command will appear only if a valid VPI and VCI have been entered in their respective fields on the Add/Delete Entry screen. This command deletes the PVC from the BRIM-A6DP connection table.

RETURN
This command opens the previous Local Management screen.

3.5.2 Adding an Entry (PVC)

To add an entry (PVC), perform the following steps:

1. Use the arrow keys to highlight the **VPI** field and enter 0.
2. Use the arrow keys to highlight the **VCI** field and enter a value between 1 and 1023.
3. Use the arrow keys to highlight the **Encapsulation Type** field and press the SPACE bar until the desired Encapsulation Type displays.
4. Use the arrow keys to highlight the **AAL Type** field and press the SPACE bar until the desired AAL Type displays.
5. Use the arrow keys to highlight the **ADD/MODIFY** command.
6. Press ENTER. The “ENTRY ADDED” message displays at the top of the screen indicating that Local Management has added the PVC to the connection table.

3.5.3 Modifying an Entry (PVC)

To modify an existing entry (PVC), perform the following steps:

1. Use the arrow keys to highlight the **VPI** field and enter 0.
2. Use the arrow keys to highlight the **VCI** field, and enter the VCI value that you want to change. The available range for this field is 1 through 1023.
3. Use the arrow keys to highlight the **Encapsulation Type** field and press the SPACE bar until the desired Encapsulation Type displays.
4. Use the arrow keys to highlight the **AAL Type** field and press the SPACE bar until the desired AAL Type displays.
5. Use the arrow keys to highlight the **ADD/MODIFY** command.
6. Press ENTER. The "ENTRY DELETED" then "ENTRY ADDED" messages display at the top of the screen indicating that Local Management has modified the PVC.

3.5.4 Deleting an Entry (PVC)

To delete an entry (PVC), perform the following steps:

1. Use the arrow keys to highlight the **VPI** field and enter the VPI of the PVC that you want to delete.
2. Use the arrow keys to highlight the **VCI** field and enter the VCI of the PVC that you want to delete.
3. Use the arrow keys to highlight the **DELETE ALL** command.
4. Press ENTER. The "ENTRY DELETED" message appears at the top of the screen indicating that Local Management has deleted the PVC.

The **DELETE ALL** command appears only if a valid VPI and VCI have been entered in their respective fields.

3.6 THE LEC ADMINISTRATION SCREEN

To access the LEC Administration screen from the ATM Setup screen, perform the following steps:

1. Use the arrow keys to highlight the **LEC Administration** selection from the ATM Setup screen.
2. Press ENTER; the LEC Administration screen, Figure 3-4, displays.

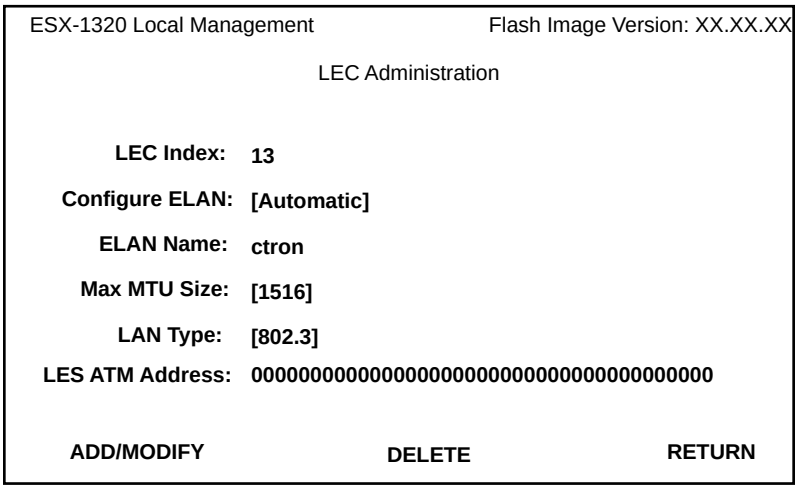


Figure 3-4 The LEC Administration Screen

3.6.1 LEC Administration Screen Fields

The LEC Administration allows the user to add, modify, or delete LAN Emulation Clients (LECs). New LECs can be customized by the user, or the new LEC can be created using default settings which are stored by the BRIM-A6DP.

The following list explains each of the LEC Administration screen fields and commands:

LEC Index

This field is used to identify this LEC in the ATM Forum's LEC MIB. By default, a single LEC will be automatically configured on the first available LEC Index by the BRIM-A6DP when the host device is first powered up. The range of available LEC Indices is dependent on the type of host device the BRIM-A6DP resides in. Refer to Table 3-2 for a listing of the available LEC Indices for the Cabletron Systems products the BRIM-A6DP may be installed in.

Table 3-2 BRIM-A6DP LEC Indices

BRIM-A6DP Host Product	Available LEC Indices
EMM-E6	5 through 20
ESXMIM	7 through 22
ESX-1320/ESX-1380	13 through 28
MicroMMAC	2 through 14
NBR-420	4 through 19
NBR-620	6 through 21

To create additional LECs, this field must be used to increment the LEC Index count.

Configure ELAN

This field allows the user to configure a new LEC manually, or have the LEC configured automatically. This field toggles between **[Automatic]** and **[Manual]**. For instructions on how to configure a new LEC automatically or manually refer to Section 3.6.2.

ELAN Name
This field is used to provide a user-defined ELAN for this LEC to join. This field is modifiable when the LEC is configured in both automatic and manual mode.

MAX MTU Size
This field is used to define the Max MTU size (in bytes) that this LEC is allowed to transmit onto the ELAN. This field toggles between the following options:

- **[1516]**
- **[4554]**
- **[9234]**
- **[18190]**
- **[unspecified]**

Although this field will display the options above, the BRIM-A6DP currently supports the default setting of **[1516]** only. Setting the MAX MTU Size field to a different setting causes the BRIM-A6DP to not function properly.

LAN Type
This field displays the type of ELAN that the LEC will join. The only type of ELAN currently supported by the BRIM-A6DP is the default setting of **[802.3]**.

LES ATM Address
This field displays the address of the LAN Emulation Server with which the LEC registers. If the LEC is configured manually, the LES ATM Address must be entered in this field manually. If the LEC is configured automatically, it is not necessary to enter the LES ATM Address, as the BRIM-A6DP will learn this address dynamically.

ADD/MODIFY
This command adds the LEC to the BRIM-A6DP LEC Index.

DELETE
This command deletes the LEC from the BRIM-A6DP LEC Index.

RETURN
This command opens the previous Local Management screen.

3.6.2 Configuring the LEC Automatically

To have the BRIM-A6DP configure the LEC automatically, perform the following steps:

1. Use the arrow keys to highlight the **LEC Index** field. When first powered up the BRIM-A6DP, by default, automatically creates the first LEC, at the first available LEC Index. If only one LEC instance is needed, this step may be skipped.
2. Enter the next available LEC Index for the new LEC to be created on. Refer to Table 3-2 for a listing of the available LEC Indices for Cabletron Systems products that support the BRIM-A6DP.
3. Use the arrow keys to highlight the **Configure ELAN** field.
4. Press the SPACE bar until the **[Automatic]** option displays.
5. Use the arrow keys to highlight the **ADD/MODIFY** command at the bottom of the screen and press ENTER. The LEC will now be configured automatically by the BRIM-A6DP.

3.6.3 Configuring the LEC Manually

To configure the LEC manually, perform the following steps:

1. Use the arrow keys to highlight the **LEC Index** field. When first powered up the BRIM-A6DP, by default, automatically creates the first LEC, at the first available LEC Index. If only one LEC instance is needed, this step may be skipped.
2. Enter the next available LEC Index for the new LEC to be created on. Refer to Table 3-2 for a listing of the available LEC Indices for Cabletron Systems products that support the BRIM-A6DP.
3. Use the arrow keys to highlight the **Configure ELAN** field.
4. Press the SPACE bar until the **[Manual]** option displays.
5. Use the arrow keys to highlight the **ELAN Name** field. Enter a name for the LEC that is no more than 32 characters in length.

6. Ensure that the MAX MTU Size field displays **[1516]**. If it does not, press the SPACE bar until **[1516]** displays.
7. Use the arrow keys to highlight the **LES ATM Address** field.
8. Enter the LES ATM Address. Ensure that a valid ATM Address is used.
9. Use the arrow keys to highlight the **ADD/MODIFY** command at the bottom of the screen and press ENTER. The manually configured LEC is now entered into the BRIM-A6DP LEC Index. Check the ELAN Properties screen to verify that the ELAN became operational. For information on the ELAN Properties screen proceed to Section 3.7.

3.7 THE ELAN PROPERTIES SCREEN

To access the ELAN Properties screen from the ATM Setup screen, perform the following steps:

1. Use the arrow keys to highlight the **ELAN Properties** selection of the ATM Setup screen.
2. Press ENTER; the ELAN Properties screen, Figure 3-5, displays.

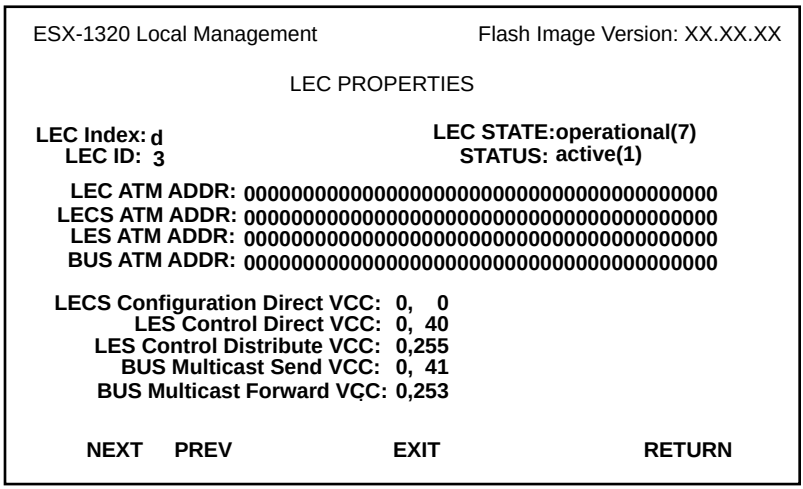


Figure 3-5 The ELAN Properties Screen

3.7.1 ELAN Properties Screen Fields

The ELAN Properties screen is a read-only screen that allows the user to view current information on multiple LAN Emulation components.

The following list explains each of the ELAN Properties screen fields and commands:

LEC Index

This field is used to identify this LEC in the ATM Forum's LEC MIB. This value is provided dynamically and is not modifiable by the user.

LEC ID

The LEC ID displays the LAN Emulation Client Identifier assigned to this LEC by the LAN Emulation Server when the LEC was created. If the LEC ID field reads "0" it signifies that this LEC is not a member of an Emulated LAN and is not connected to a LAN Emulation Server.

LEC State

This field displays the current state that the LEC is in. The possible states are as follows:

initialState

lecsConnect

configure

join

initialRegistration

busConnect

operational

Status

This field displays the current status of the LEC. The Status field reads either "**active**" or "**inactive**".

LEC ATM ADDR

This field displays the ATM Address of this LEC.

LECS ATM ADDR
This field displays the ATM address of the LAN Emulation Configuration Server. If this LEC was configured manually, this field can be empty.

LES ATM ADDR
This field displays the ATM Address of the LAN Emulation Server to which the LEC is connected.

BUS ATM ADDR
This field displays the ATM Address of the Broadcast or Unknown Server to which the LEC is connected.

LECS Configuration Direct VCC
This field displays the VPI and VCI of the Configuration Direct Virtual Channel Connection (VCC) that the LEC has with the LECS. This channel may be deleted by the LECS after it has been used.

LES Control Distribute VCC
This field displays the VPI and VCI of the Control Distribute Virtual Channel Connection (VCC) that the LEC has with the LES.

LES Control Direct VCC
This field displays the VPI and VCI of the Control Direct Virtual Channel Connection (VCC) that the LEC has with the LES.

BUS Multicast Send VCC
This field displays the VPI and VCI of the Multicast Send Virtual Channel Connection (VCC) that the LEC has with the BUS.

BUS Multicast Forward VCC
This field displays the VPI and VCI of the Multicast Forward Virtual Channel Connection (VCC) that the LEC has with the BUS.

NEXT
This command lets the user scroll to the screen that displays the properties of the next ELAN configured for the BRIM-A6DP. To go to the next screen use the arrow keys to highlight the **NEXT** command and press ENTER. The next screen displays.

PREV
This command lets you scroll to the previous screen. To go to the previous screen use the arrow keys to highlight the **PREV** command and press ENTER. The previous ELAN Properties screen displays.

RETURN
This command opens the previous Local Management screen.

3.8 THE SIGNALLING SCREEN

To access the Signalling screen from the ATM screen, perform the following steps:

1. Use the arrow keys to highlight the **Signalling** selection of the ATM Setup Screen.
2. Press ENTER; the Signalling screen, Figure 3-6, displays.

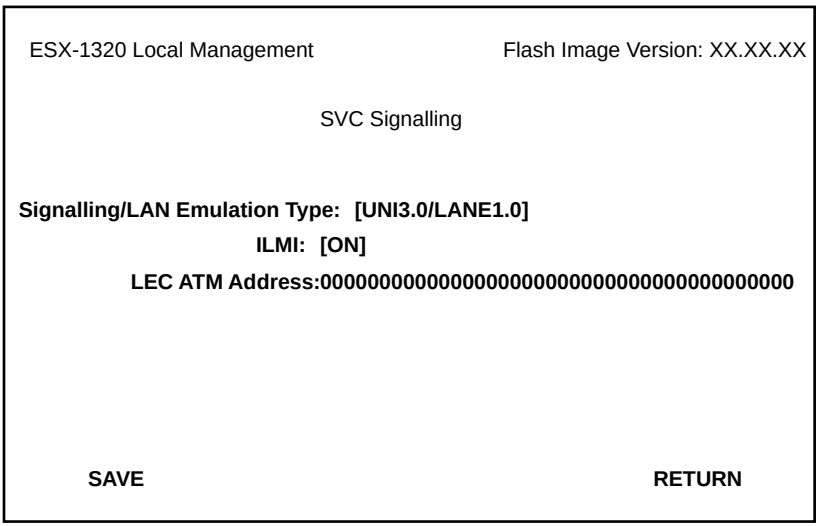


Figure 3-6 The Signalling Screen

3.8.1 Signalling Screen Fields

The Signalling screen allows the user to select the type of SVC signaling and LAN Emulation to be used, to enable or disable the Interim Local Management Interface (ILMI) and enter the base ATM Address of the BRIM-A6DP.

The following list explains each of the Signalling Screen fields and commands:

Signalling/LAN Emulation Type
This field displays the current version of SVC Signalling and LAN Emulation being used by the BRIM-A6DP. This field can be set for the following options:

[UNI 3.0/LANE 1.0]

[UNI 3.1/LANE 1.0]

[SPANS/LANE 0.4]

[SPANS/LANE 0.4] is a proprietary signalling and LAN Emulation type and will NOT operate with devices which are using UNI and LANE 1.0.

ILMI
This field toggles between **[ON]** and **[OFF]**. ILMI is used by the BRIM-A6DP to get an ATM address from the ATM switch.

If ILMI is set to **[OFF]**, an ATM Address must be given to the BRIM-A6DP manually using the **LEC ATM Address** field.

LEC ATM Address
This field allows the user to enter a base ATM Address for the BRIM-A6DP. If ILMI is enabled, the BRIM-A6DP ATM Address is automatically configured.

SAVE
This command saves all changes to memory.

RETURN
This command opens the previous Local Management screen.

3.8.2 Setting the SVC Signalling and LAN Emulation Type

To set the Signalling and LAN Emulation Type, perform the following steps:

1. Use the arrow keys to highlight the **Signalling/LAN Emulation Type** field.
2. Press the SPACE bar until the desired Signalling and LAN Emulation type displays.
3. Use the arrow keys to highlight the **SAVE** command at the bottom of the screen,.
4. Press ENTER. The changes are saved to memory.

3.8.3 Enabling and Disabling the ILMI

To enable or diable the ILMI, perform the following steps.

1. Use the arrow keys to highlight the **ILMI** field.
2. Press the SPACE bar to toggle between **[ON]** and **[OFF]** until the desired mode displays.
3. Use the arrow keys to highlight the **SAVE** command at the bottom of the screen.
4. Press ENTER. The changes are saved to memory.

3.8.4 Setting the LEC ATM Address

To give the BRIM-A6DP a base ATM address, perform the following steps:

If the ILMI is enabled, the BRIM-A6DP ATM address is automatically configured.

1. Use the arrow keys to highlight the **LEC ATM Address** field.
2. Enter the desired ATM address, ensure that a valid ATM address is entered.
3. Use the arrow keys to highlight the **SAVE** command at the bottom of the screen.
4. Press ENTER. The changes are saved to memory.

3.9 THE VLAN ASSIGNMENT SCREEN

To access the VLAN Assignment screen from the ATM Setup screen, perform the following steps:

1. Use the arrow keys to highlight the **VLAN Assignment** field of the ATM Setup screen.
2. Press ENTER. The **Port/VLAN Assignment** screen, Figure 3-7, displays.

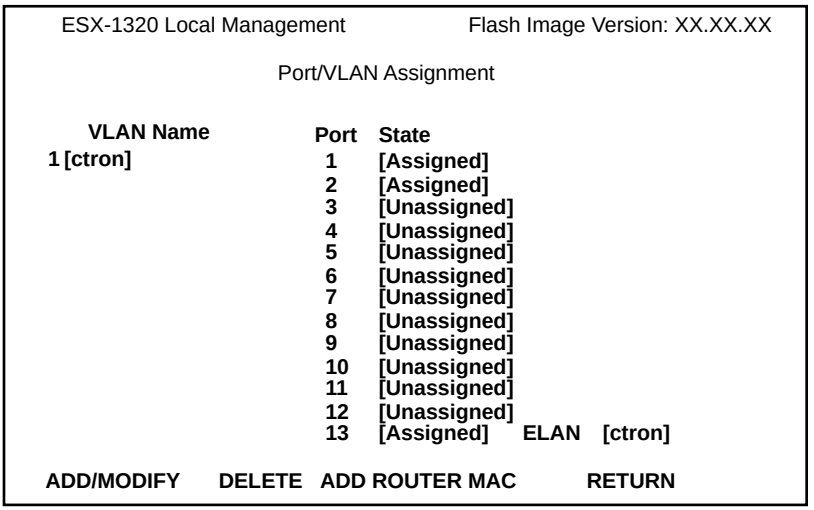


Figure 3-7 The Port/VLAN Assignment Screen

3.9.1 Port/VLAN Assignment Screen Fields

The Port/VLAN Assignment screen is used to create Virtual LANs and to assign front panel Ethernet ports to those VLANs.

The following list describes each of the Port/VLAN Assignment screen fields:

VLAN Name
The VLAN Name field allows the user to toggle between created VLANs, and to assign new VLAN names. Refer to Section 3.11.1 for details on how to use this field.

Port
This field represents the port number of the front panel Ethernet port. The last port number in this field represents the ELAN.

State
This field is used to designate which ports will be assigned to the VLAN that is currently in the VLAN Name field. This field toggles between **[Assigned]** and **[Unassigned]**. For more information on the guidelines concerning the assignment of ports to VLANs, refer to Section 3.10.1.

ADD/MODIFY
This command saves all changes to memory.

DELETE
This command deletes the VLAN that is displayed in the VLAN Name field.

ADD ROUTER MAC
This command opens the Add Router MAC screen. The Add Router MAC screen is used to enter the MAC address of the router being used to provide inter-ELAN communication. The Add Router MAC screen is also used to enter the MAC addresses of end users that belong to more than one VLAN/ELAN pair.

The MAC address of the router only needs to be added for routers that use a single MAC address for all ELANs. If the router uses a separate MAC address for each ELAN then the Add Router MAC screen function is not necessary.

RETURN
This command opens the previous Local Management Screen.

3.10 VLAN OVERVIEW

Read this section thoroughly before configuring VLANs from the VLAN Assignment screen. If the guidelines and directions outlined in the following sections are not complied with, poor network performance will occur.

The following sections provide an overview of the VLAN functionality of the BRIM-A6DP and give step-by-step instructions on how to create and configure VLANs.

When the BRIM-A6DP is first initialized, a LEC is automatically created by the BRIM-A6DP. This LEC contacts the LAN Emulation Configuration Server (LECS) so it can be assigned to an Emulated LAN (ELAN). The BRIM-A6DP also automatically creates a default VLAN upon first initialization, and assigns all front panel Ethernet interfaces to this VLAN. Once the LAN Emulation Configuration Server has determined which ELAN the LEC belongs to, the BRIM-A6DP automatically maps the ELAN to the VLAN so that all front panel Ethernet ports can communicate over the ATM network. Once the BRIM-A6DP has performed these automatic functions, the user has the choice to perform the following tasks:

- Remove front panel Ethernet ports from the VLAN
- Create additional LECs, and assign front panel Ethernet ports to new VLANs
- Create Ethernet-only (front panel, port-to-port) VLANs.

Once a VLAN is created, any traffic that is originated on that particular VLAN will be confined to that VLAN even if the destination address of the frame(s) is broadcast, multicast or unknown unicast.

3.10.1 Configuration Guidelines

This section provides guidelines for the operation of VLANs over ATM. If the following guidelines are not followed, poor network performance may result.

Maximum of 16 ELAN/VLAN Pairs

The maximum number of LAN Emulation Clients (LECs) that can be created using Local Management or the ATM Forum's LEC MIB is 16.

No Support for Spanning Tree Algorithm

This version of BRIM-A6DP firmware does not support the Spanning Tree Algorithm. Ensure that no parallel network links to the ATM network exist, otherwise data loops will occur and bring the network down.

ELAN to VLAN Mappings

It is not possible to map more than one ELAN to a single VLAN. Several VLANs, however, can be mapped to a single ELAN.

LEC and PVC Mixture

A mixture of Permanent Virtual Channels (PVCs) and LAN Emulation Clients (LECs) is not allowed in this version of BRIM-A6DP firmware. It does allow, however, the mapping of Ethernet ports to LECs, or to other Ethernet ports.

User Mobility

This version of BRIM-A6DP firmware allows the movement of Ethernet users from one LEC to another, but a brief downtime will result. The ATM Forum's LAN Emulation 1.0 specification states that it may take up to 300 seconds for a LAN MAC address entry to be aged out of the old LEC's LE-ARP cache before it can communicate through a new LEC instance.

Layer 3 Routing Requirement

Communication between ELANs requires the presence of an OSI Layer 3 routing protocol. Security may be achieved via access lists in the router.

Static Entry for Router MAC Address

If the router being used for inter-ELAN communication uses a single MAC address for all LECs, this address must be entered in the Add Router MAC screen. For information on how to complete this procedure refer to Section 3.12.

Static Entry for MAC Addresses of End Users with Multiple ELAN/VLAN Mappings

The MAC Address for any end device which has multiple ELAN/VLAN mappings must be entered in the Add Router MAC screen of every BRIM-A6DP present on the network except for the BRIM-A6DP that is installed in the host device to which the end user is directly connected. For information on how to complete this procedure, refer to Section 3.12.

Shared Media is Not Supported

ELAN/VLAN mappings are not able to be maintained across shared media such as Token Ring and FDDI.

Multiple VLAN Registration

If an Ethernet port is mapped to more than one VLAN, that Ethernet port must not be connected to another Ethernet switch, repeater, bridge, or router. Only end users are allowed on an Ethernet port that is registered to more than one VLAN. The MAC Address for any end device which has multiple ELAN/VLAN mappings must be entered in the Add Router MAC screen of every BRIM-A6DP present on the network except for the BRIM-A6DP that is installed in the host device to which the end user is directly connected. For information on how to complete this procedure, refer to Section 3.12.

Deletion of LEC Instances

If a LEC is deleted by the user, all Ethernet ports that were mapped to that LEC instance are no longer able to communicate with the ATM network. The Ethernet ports must be reassigned to another VLAN which contains another LEC instance to reestablish communication with the ATM network.

3.11 CREATING VLANs

Local Management allows the creation of two types of VLANs. The two types are ATM LEC VLANs and Ethernet-only VLANs. Each type of VLAN has special requirements that must be followed when configuring them. The following sections describe the requirements for each type of VLAN.

3.11.1 ATM LEC VLANs

When the BRIM-A6DP is first initialized, a single LEC is automatically created. This LEC contacts the LAN Emulation Configuration Server (LECS) and joins an ELAN. The BRIM-A6DP then creates a VLAN that all Ethernet ports join. This VLAN is then mapped to the ELAN that the LEC has joined. Before creating additional VLAN to ELAN mappings ensure the following network requirements are met:

- A set of LAN Emulation Services (LAN Emulation Server and Broadcast and Unknown Server) are present for each ELAN.
- After creating the necessary LECs from the LEC Administration screen (Section 3.6) verify that the LECs are connected to the LES and BUS by viewing the ELAN Properties screen (Section 3.7).

To create additional VLAN to ELAN mappings, perform the following steps:

1. Use the arrow keys to highlight the **VLAN Name** field on the Port/VLAN Assignment screen. By default, there are 16 unnamed VLANs identified as **novlan**.

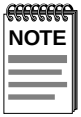
To create additional VLANs, use the arrow keys to highlight the VLAN Name field and press the SPACE bar until the next default VLAN named "**novlan**" displays. If a new VLAN name is entered where an assigned VLAN name already exists, the new VLAN name will overwrite the existing VLAN.

2. Press ENTER. Enter the name of the VLAN, using no more than 16 characters, and press ENTER again.

3. Using the arrow keys, highlight the port(s) that will be assigned to the VLAN that is currently displayed in the **VLAN Name** field. With the port highlighted, use the SPACE bar to toggle between **[Assigned]** and **[Unassigned]** until the desired mode displays.

4. The last port listed in the Port/VLAN Assignment screen displays any ELANs which have been configured on the BRIM-A6DP. Use the arrow keys to highlight the **ELAN** field near the bottom of the screen.

5. Press the SPACE bar to view the configured ELANs. When the name of the desired ELAN displays, it can be assigned or unassigned to this VLAN by using the arrow keys to highlight the **State** field and pressing the SPACE bar until the desired mode displays.



A VLAN can never have more than one ELAN assigned to itself. Communications between ELANs is only possible through a Layer 3 routing device.

6. When all the desired ports have been assigned to the VLAN, use the arrow keys to highlight the **ADD/MODIFY** command at the bottom of the screen and press ENTER. The changes are saved to memory.

If more than one ELAN has been configured, and communication between the ELANs is necessary, a Layer 3 routing device is required. If the router uses a single MAC address for all LECs, this address must be entered manually via the Add Router MAC screen. Refer to Section 3.12 for instructions on how to perform this procedure.

3.11.2 Ethernet-only VLANs

An Ethernet-only VLAN is a group of Ethernet ports which are able to communicate with each other without having to traverse the ATM network. Ethernet-only VLANs can be used to create user groups local to an Ethernet switch. To create an Ethernet-only VLAN, perform the following steps:

1. Use the arrow keys to highlight **VLAN Name** field on the Port/VLAN Assignment screen. By default there are 16 unnamed VLANs identified as **novlan**.

To create additional VLANs, use the arrow keys to highlight the **VLAN Name** field and press the SPACE bar until the next default VLAN named "**novlan**" displays. If a new VLAN name is entered where an assigned VLAN name already exists, the new VLAN name will overwrite the existing VLAN.

2. Press ENTER. Enter the name of the VLAN, using no more than 16 characters, and press ENTER again.
3. Using the arrow keys, highlight the port(s) that will be assigned to the VLAN that is currently displayed in the **VLAN Name** field. With the port highlighted, use the SPACE bar to toggle between **[Assigned]** and **[Unassigned]** until the desired mode displays.
4. Use the arrow keys to highlight the **ELAN** field near the bottom of the screen. Press the SPACE bar until **[none]** displays. An Ethernet-only VLAN cannot have any ELANs assigned to it.
5. When all the desired ports have been assigned to the VLAN, use the arrow keys to highlight the **ADD/MODIFY** command at the bottom of the screen and press ENTER. The changes are saved to memory.

3.12 THE ROUTER MAC ADDRESS SCREEN

To open the Router MAC Address screen from the Port/VLAN Assignment screen, perform the following steps:

1. Use the arrow keys to highlight the **ADD ROUTER MAC** command at the bottom of the screen.
2. Press ENTER. The Router MAC Address screen, Figure 3-8, displays.

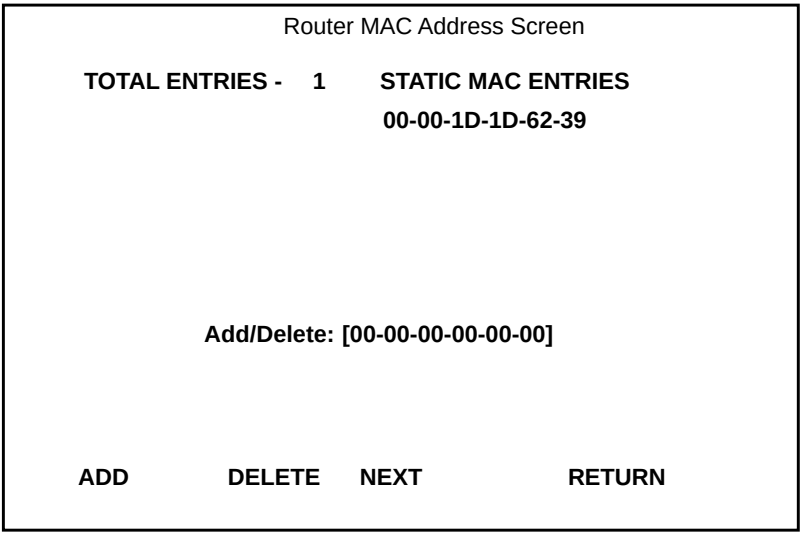


Figure 3-8 The Router MAC Address Screen

3.12.1 Router MAC Address Screen Fields

The Router MAC Address Screen is used to statically program the MAC Address of the router being used to route between ELANs or the MAC address of an end device which is mapped to more than one ELAN/VLAN.

The MAC address of the router need only be entered if the router uses the same MAC address for all LECs.

Ensure that the following rules are complied with if the MAC address being entered is for an end device that has multiple ELAN/VLAN mappings:

- The MAC address that has more than one ELAN/VLAN mapping MUST be an end user. ONLY end users may be mapped to more than one ELAN/VLAN pair.
- The MAC address of the end user MUST be entered into the Add Router MAC screen of EVERY BRIM-A6DP present on the network, EXCEPT the BRIM-A6DP that is installed in the host device to which this end user is connected.

Total Entries
This field displays the total number of entries which have been saved to memory.

Static MAC Entries
This field displays the MAC Addresses that have been saved to memory. Up to six MAC addresses may be viewed on one screen.

Add/Delete
This command allows the user to save a MAC address to memory. The MAC address must be entered using a dash (-) between every two characters (i.e., 00-00-1D-12-34-56).

ADD
This command adds the entry that is currently in the **Add/Delete** field.

DELETE
This command deletes the entry that is currently in the **Add/Delete** field.

NEXT
This command displays the next six MAC addresses of the **STATIC MAC ENTRIES** field. To use this command, use the arrow keys to highlight the **NEXT** command and press ENTER. The next series of MAC addresses displays.

PREV

This command displays the previous six MAC addresses of the STATIC MAC ENTRIES field. To use this command, use the arrow keys to highlight the **PREV** command and press ENTER. The previous series of MAC addresses displays.

RETURN

This command opens the previous Local management screen.

3.12.2 Adding MAC Entries

To add a MAC address, perform the following steps:

1. Use the arrow keys to highlight the **Add/Delete** field.
2. Enter the MAC Address. The MAC address must be entered using a dash (-) between every two characters (i.e., 00-00-1D-12-34-56).
3. Use the arrow keys to highlight the **ADD** command at the bottom of the screen.
4. Press ENTER. The changes are saved to memory.

3.12.3 Deleting MAC Entries

To delete a MAC address, perform the following steps:

1. Use the arrow keys to highlight the **Add/Delete** field.
2. Enter the MAC Address that will be deleted. The MAC address must be entered using a dash (-) between every two characters (i.e., 00-00-1D-12-34-56).
3. Use the arrow keys top highlight the **DELETE** command at the bottom of the screen.
4. Press ENTER. The MAC Address is deleted.

CHAPTER 4
LANVIEW LEDs

This chapter describes how to use the LANVIEW LEDs to monitor BRIM status and diagnose BRIM problems.

4.1 BRIM-A6DP LEDs

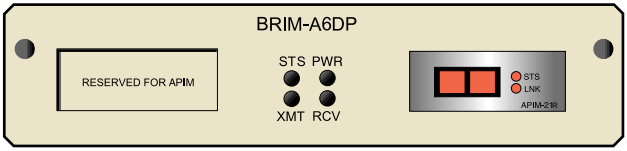


Figure 4-1 The BRIM-A6DP

Table 4-1 explains each of the BRIM LEDs.

Table 4-1 BRIM LEDs

LED	Definition
STS (Status)	Green - Board OK. Red - Board Error. Yellow - Standby.
PWR (Power)	Green (on) - Power is on. Off - No power.
XMT (Transmit)	Green - Cells being transmitted.
RCV (Receive)	Yellow - Cells being received.

4.2 APIM LEDs

Table 4-2 describes each of the APIM LEDs.

Table 4-2 APIM LEDs

LED	Definition
LNK (Link)	Green - Have link. Off - No link.
STS (Status)	Green - APIM OK. Red - Fault with media. In most cases, the APIM automatically corrects this condition without interrupting operations. If the LED is red and remains red, contact Cabletron Systems Technical Support.

APPENDIX A
APIM SPECIFICATIONS

This Appendix describes the ATM Port Interface Modules (APIMs).

A.1 APIM-11 SPECIFICATIONS

Transmit Power:	-14db to -18.5db
Receive Sensitivity:	-14db to -32.5db
Loss Budget:	-14db to -18.5db
Wavelength:	1270nm to 1380nm
Typical Link Distance:	2 km

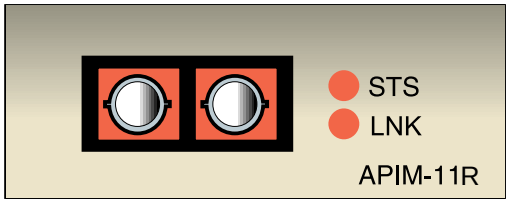


Figure A-1 The APIM-11

A.2 APIM-21 SPECIFICATIONS

Transmit Power:	-14db to -18.5db
Receive Sensitivity:	-14db to -32.5db
Loss Budget:	-14db to -18.5db
Wavelength:	1270nm to 1380nm
Typical Link Distance:	2 km

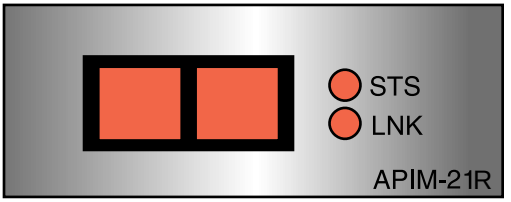


Figure A-2 The APIM-21

A.3 APIM-29 SPECIFICATIONS

Transmit Power:	-8db to -14db
Receive Sensitivity:	-6db to -32.5db
Loss Budget:	-8db to -24.5db
Wavelength:	1261nm to 1360nm
Typical Link Distance:	25 km

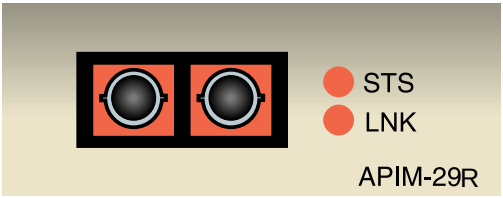


Figure A-3 The APIM-29

A.4 APIM-29LR SPECIFICATIONS

Transmit Power:	0db to -5db
Receive Sensitivity:	-31db
Loss Budget:	-26db to -31db
Wavelength:	1280nm to 1335nm
Typical Link Distance:	60 km

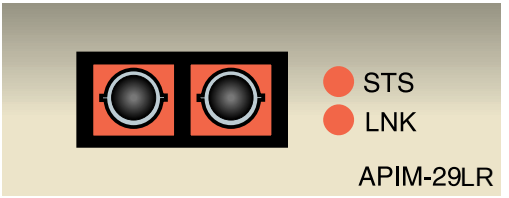
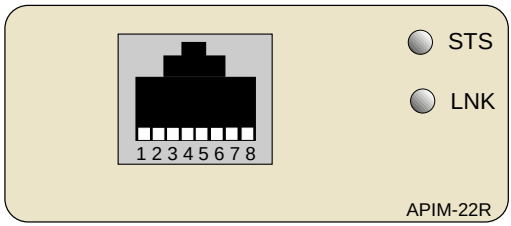


Figure A-4 The APIM-29

A.5 APIM-22 SPECIFICATIONS

Physical Interface:	STS3
Media Type:	Category 5 Unshielded Twisted Pair
Data Rate:	155 Mbps
Connector Type:	RJ45
Typical Link Distance:	100 Meters

The APIM-22R is considered an *ATM User Device* and therefore has a different signal pin assignment than the *ATM Network Equipment* as specified by the ATM Forum User-Network Interface (UNI) specification. Figure A-5 shows the pin assignments for the APIM-22R.



1. Transmit +
2. Transmit -
3. N/A
4. N/A
5. N/A
6. N/A
7. Receive +
8. Receive -

142912

Figure A-5 APIM-22 Pin Assignments

A.6 APIM-67 SPECIFICATIONS

Physical Interface:	DS3
Media Type:	75 Ohm Coaxial Cable
Data Rate:	45 Mbps
Connector Type:	BNC
Typical Link Distance:	136 Meters

The APIM-67R does not use Cell Payload Scrambling. Scrambling must be disabled on any DS3 device connected to the APIM-67R.

The APIM-67 conforms to the electrical characteristics specified by ANSI T1.404-1989 *Carrier-to-Customer Installation-DS3 Metallic Interface Specification*, section 5.12 *Grounding Arrangements*. In accordance with this specification, each channel (Transmit and Receive) must be grounded at one end.

Cabletron Systems ships the APIM-67R with the following default jumper settings:

- Receive channel jumper - grounded
- Transmit channel jumper - not grounded

Figure A-6 shows the location and default setting of each jumper. Refer to Figure A-6 if you need to change the jumper settings to properly connect the APIM-67R to another DS3 device.

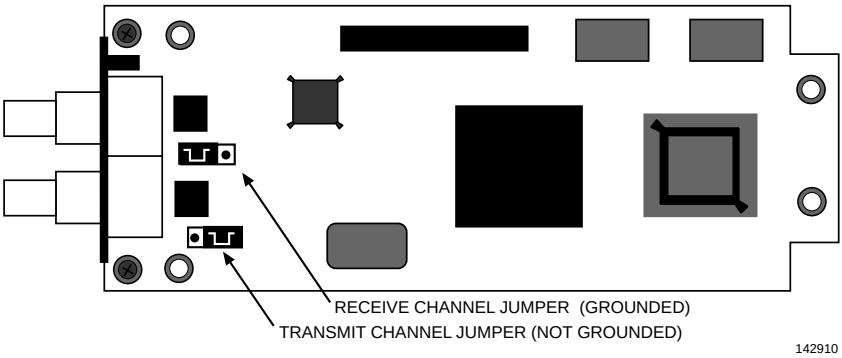


Figure A-6 APIM-67R Default Jumper Settings

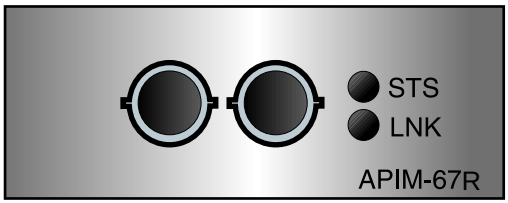


Figure A-7 The APIM-67

APPENDIX B
BRIM-A6DP SPECIFICATIONS

B.1 BRIM-A6DP SPECIFICATIONS

This section describes environment specifications and safety requirements for the BRIM-A6DP. Cabletron Systems reserves the right to change these specifications at any time without notice.

Environment

Operating Temperature:	5°C to 40°C (41°F to 104°F)
Storage Temperature:	-30°C to 90°C (-22°F to 194°F)
Operating Relative Humidity:	5% to 90% (non-condensing)

Regulatory Compliance

Safety:	UL 1950, CSA C22.2 No. 950, EN 60950, 73/23/EEC, and IEC 950
Electromagnetic Compatibility (EMC):	FCC Part 15,VCCI V-3/93.01, CSA C108.8, EN 50082-1, 89/336/EEC, and EN 55022